WHAT IS CLAIMED IS:

1.   A spectral label identification method comprising:

spatially restraining a first spectrally labeled body;

generating a first spectrum from the first body while the first body is spatially restrained;

dispersing the first spectrum from the first body across a sensor surface; and

identifying the first body from the dispersed first spectrum.

2.   The method of claim 1, wherein a plurality of bodies are released in a fluid, and further comprising spatially separating the first body from other released bodies while the first spectrum is generated.

3.   The method of claim 1, wherein the positioning step comprises advancing the first body into an opening, the opening sized to accommodate a single body therein.

4.   The method of claim 1, further comprising:

spatially restraining a second spectrally labeled body;

generating a second spectrum from the second body while positioning the second body, the first spectrum being different than the second spectrum; and

identifying the second body from the second spectrum.

5.   The method of claim 4, wherein a plurality of spectrally labeled bodies are simultaneously spatially restrained at an array of sites.

6.   The method of claim 5, wherein a plurality of the spectra from the bodies are simultaneously dispersed across the sensor surface.

7.   The method of claim 6, wherein the array of sites are spaced to avoid excessive overlap of the dispersed spectra such that each of the bodies can be identified from the associated spectrum.

8.   The method of claim 5, further comprising sequentially sensing the first and second spectra with a scanning sensor system by moving a sensing field between the bodies.

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1   9.   The method of claim 4, wherein the first and second body are

2   sequentially spatially restrained.

1   10.   The method of claim 9, further comprising drawing the first body into

2   an opening by drawing fluid into the opening, expelling the body from the first opening, and

3   drawing the second body into the opening by drawing fluid into the opening, the signal

4   generating steps being performed while the first and second bodies are sequentially disposed

5   within the opening.

1   11.   The method of claim 10, further comprising drawing fluid into an array

2   of openings and expelling fluid from the array of opening so as to sequentially restrain a

3   plurality of arrays of bodies.

1   12.   The method of claim 9, wherein the first and second bodies are

2   spatially restrained by an energy beam.

1   13.   The method of claim 4, further comprising sensing first and second

2   assay signals from the first and second bodies, each assay signal indicating results of an assay

3   associated with the body.

1   14.   The method of claim 4, further comprising restraining and identifying

2   at least 100 different bodies from different spectra generated by the bodies.

1   15.   The method of claim 14, further comprising restraining and identifying

2   at least 1000 different bodies from different spectra generated by the bodies.

1   16.   A method comprising:

2   spatially restraining a plurality of spectrally labeled bodies so as to define an

3   array;

4   directing a spectrally dispersed image of the array of bodies onto a sensor to

5   sense spectra generated by the bodies;

6   identifying the bodies from the spectra sensed by the sensor.

1   17.   A method as claimed in claim 16, wherein the bodies are restrained

2   within an array of openings affixed in a multi-well plate.

1   18.   A method as claimed in claim 16, further comprising drawing the array

2 of bodies into the array of opening by drawing fluid into the openings, expelling the array of

3 bodies from the opening by expelling fluid from the openings, and drawing another array of

4 bodies into the array of openings by again drawing fluid into the openings.

1   19.   The method of claim 16, wherein the bodies are restrained in the array

2 by an array of discrete binding sites, the binding sites comprising a material capable of

3 binding to the bodies.

1   20.   A method comprising:

2   releasing a plurality of bodies in a fluid;

3   spatially restraining a first body within the fluid by transmitting restraining

4 energy through the fluid toward the body;

5   generating a first spectrum from the spatially restrained first body; and

6   identifying the first body from the first spectrum.

1   21.   The method of claim 20, wherein the spatially restraining step is

2 performed with a focused laser beam, the laser beam acting as an optical tweezers.

1   22.   The method of claim 21, wherein the focused laser beam is sized and

2 configured to restrain a single body.

1   23.   The method of claim 22, wherein the focused laser beam defines a trap,

2 and wherein a size of the bodies is at least about half the size of the trap so as to inhibit

3 restraining a plurality of the beads within the trap.

1   24.   The method of claim 21, wherein the focussed laser beam is configured

2 to restrain a plurality of the bodies simultaneously.

1   25.   The method of claim 24, wherein the trap is elongated so that the

2 restrained bodies are arranged along a line.

1   26.   The method of claim 20, further comprising directing excitation energy

2 toward the restrained body, the body generating the spectrum in response to the excitation

3 energy.

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1   27.   The method of claim 20, wherein the restrained body generates the
2 spectrum in response to the restraining energy.

1   28.   The method of claim 20, further comprising transmitting the spectrum
2 toward a sensor along an optical path, and transmitting the restraining energy toward the
3 body along at least a portion of the optical path.

1   29.   The method of claim 20, further comprising moving the restrained
2 body within the fluid by moving the restraining energy or the fluid.

1   30.   The method of claim 29, further comprising sweeping the restraining
2 energy through the fluid to move the first body toward a first site.

1   31.   The method of claim 30, further comprising sweeping the restraining
2 energy through the fluid to move a second body toward a second site.

1   32.   The method of claim 31, further comprising inhibiting transmission of
2 the restraining energy between the first and second sites.

1   33.   The method of claim 30, further comprising sweeping the restraining
2 energy through the fluid to move a second body toward the first site.

1   34.   A multiplexed assay system comprising:
2   a support structure having an array of sites;
3   a plurality of bodies, each body having a label for generating an identifiable
4 spectrum in response to excitation energy, the bodies being restrainingly receivable at the
5 sites; and
6   an optical train imaging at least one site on a sensor surface, the optical train
7 including a wavelength dispersive element.

1   35.   The assay system of claim 34, wherein the sites comprise openings in
2 the support structure.

1   36.   The assay system of claim 35, wherein the openings are sized to
2 receive a single body therein so as to separate the individual bodies for discrete imaging.

1   37.   The assay system of claim 36, wherein the bodies and support structure

2 are exposed to a fluid, and further comprising means for restraining the bodies within the

3 openings.

1   38.   The assay system of claim 37, wherein the restraining means

2 releasably restrains the bodies within the openings, releasing of the bodies allowing the

3 bodies to move with the fluid and out of the openings.

1   39.   The assay system of claim 35, further comprising a pump coupled to

2 the openings for at least one of:

3   drawing fluid and the bodies into the openings, and

4   expelling fluid and the bodies out of the openings.

1   40.   The assay system of claim 34, wherein the sites comprise a discrete

2 array of a material capable of bonding to the bodies.

1   41.   The assay system of claim 34, wherein the optical train comprises a

2 scanner for moving a sensing field among the sites.

1   42.   The assay system of claim 34, wherein the sites are separated

2 sufficiently along a dispersive axis of the dispersive element to avoid excessive overlap of

3 dispersed spectra generated simultaneously by the bodies at the sites.

1   43.   A multiplexed assay system comprising:

2   a plurality of bodies released in a fluid, the bodies having labels for generating

3 identifiable spectra;

4   an energy transmitter coupled to the fluid so as to spatially restrain at least one

5 body with a restraining energy beam; and

6   a sensor oriented to receive the spectrum from the at least one body.

1   44.   The multiplexed assay system of claim 43, wherein the energy

2 transmitter generates a focussed laser beam, energy transmitter comprising an optical

3 tweezers.

1   45.   The multiplexed assay system of claim 43, wherein the at least one

2 body generates the spectrum in response to the restraining energy beam.

1   46.   The multiplexed assay system of claim 43, further comprising an

2   excitation energy source transmitting an excitation energy toward the at least one body, the at

3   least one body generating the spectrum in response to the excitation energy.

1   47.   The multiplexed assay system of claim 43, further comprising a

2   scanner coupled to the restraining energy beam so as to move the restraining energy beam

3   within the fluid.

1   48.   The multiplexed assay system of claim 47, wherein an optical train

2   images the site toward the sensor, the energy transmitter configured to move the at least one

3   body toward the site.

1   49.   The multiplexed assay system of claim 43, further comprising an

2   optical train coupling the sensor to the at least one body.

1   50.   The multiplexed assay system of claim 49, wherein at least a portion of

2   the optical path also directs the restraining energy beam toward the at least one body.

1   51.   The multiplexed assay system of claim 43, wherein the restraining

2   energy beam is configured to restrain a single body.

1   52.   The multiplexed assay system of claim 51, wherein a size of the body

2   is at least about half the size of a trap defined by the restraining energy beam.

1   53.   The multiplexed assay system of claim 43, wherein the restraining

2   energy beam is configured to restrain a plurality of the bodies along a line.

1   54.   The multiplexed assay system of claim 53, wherein an optical train

2   directs a dispersed image of the bodies from along the line onto the sensor surface, the

3   dispersed image having a dispersion axis at an angle to the line.